WHAT IS CLAIMED IS:

1. A charge potential evaluation method comprising:

(a) a step of acquiring, in an object to be measured that has a first conductor and a second conductor opposed to each other with a dielectric therebetween, the value of the relative permittivity of the dielectric and the distance between the pair of conductors;

(b) a step of measuring, in a predetermined atmosphere, the potential V_c of a conductive plate facing a grounded surface with a predetermined distance therebetween; and

(c) a step of converting the potential difference V_h between the first conductor and the second conductor in the object to be measured in the atmosphere, using the following expression (1),

[Expression 1] $$V_h = \frac{d_h}{\varepsilon_h} \cdot \frac{\varepsilon_c}{d_c} V_c$$

where d_h denotes the distance between the first conductor and the second conductor in the object to be measured, d_c denotes the distance between the conductive plate and the grounded surface, ε_h denotes the relative permittivity of the dielectric in the object to be measured, and ε_c denotes the relative permittivity between the conductive plate and the grounded surface.

2. The charge potential evaluation method according to Claim 1, wherein ions are produced by an ionizer to form an atmosphere in which the conductive plate and the grounded

surface are to be disposed.

3. The charge potential evaluation method according to Claim 2, wherein the first conductor in the object to be measured has a pair of open terminals; and wherein, when the potential difference between the first conductor and the second conductor in the object to be measured is represented by V', and V_d denotes the value of the minimum potential difference V' that causes damage to the first conductor when one of the open terminals is connected to the ground after a potential difference V' is provided between the first and second conductors by charging the first conductor, the relative amount of positive ions and negative ions produced by the ionizer is adjusted so that the V_h value determined by the (c) step becomes lower than the V_d value.

4. The charge potential evaluation method according to Claim 1, wherein a plurality of sets of the grounded surfaces and the conductive plates are disposed in the same atmosphere, and wherein the average value of measured values of the potentials V_c of all the conductive plates is assumed to be the V_c value.

5. The charge potential evaluation method according to Claim 1, wherein the object to be measured is a head gimbal assembly (HGA) in which a first conductor to which a magnetic head is connected and a load beam serving as a second conductor, are opposed to each other with an insulating

foundation layer serving as a dielectric therebetween.

6. The charge potential evaluation method according to Claim 5, wherein a protective layer constituted of an insulating material is provided over the first conductor in the head gimbal assembly (HGA).

7. A charge potential evaluation device comprising:

a grounded surface;

a conductive plate facing the grounded surface with a predetermined distance therebetween;

potential measuring means for measuring a potential V_c of the conductive plate;

input means for inputting, in an object to be measured that has a first conductor and a second conductor opposed to each other with a dielectric therebetween, the value of the relative permittivity of the dielectric and the distance between the pair of conductors; and

conversion means for converting the potential difference V_h between the first conductor and the second conductor in the object to be measured in the same atmosphere as that of the conductive plate, by calculating the following expression (2) based on the measured value of the potential V_c of the conductive plate,

[Expression 2] $$V_h = \frac{d_h}{\varepsilon_h} \cdot \frac{\varepsilon_c}{d_c} V_c$$

where d_h denotes the distance between the first conductor and the second conductor in the object to be measured, d_c denotes

the distance between the conductive plate and the grounded surface, ε_h denotes the relative permittivity of the dielectric in the object to be measured, and ε_c denotes the relative permittivity between the conductive plate and the grounded surface.

8. A charge potential evaluation device comprising:

a grounded surface;

a conductive plate facing the grounded surface with a predetermined distance therebetween; and

potential measuring means for measuring a potential V_c of the conductive plate,

wherein the distance d_c between the conductive plate and the grounded surface and the relative permittivity ε_c between the conductive plate and the grounded surface is set, or made adjustable so that the distance d_h between a first conductor and a second conductor in an object to be measured that has the first and second conductors opposed to each other with a dielectric therebetween, the relative permittivity ε_h of the dielectric in the object to be measured, the distance d_c, and the relative permittivity ε_c satisfy the relationship shown by the following expression (3),

[Expression 3] $$\frac{d_h}{\varepsilon_h} \cdot \frac{\varepsilon_c}{d_c} = 1,$$

and wherein the potential V_c can thereby be obtained as a potential difference V_h between the first conductor and the second conductor in the object to be measured.

9. The charge potential evaluation device according to Claim 8, wherein the distance d_c between the conductive plate and the grounded surface is equal to the distance d_h between the first conductor and the second conductor in the object to be measured, and wherein the relative permittivity ε_c of the region between the conductive plate and the grounded surface is set or made adjustable to be equal to the relative permittivity ε_h of the dielectric in the object to be measured.

10. The charge potential evaluation device according to Claim 8, wherein the relative permittivity ε_c of the region between the conductive plate and the grounded surface is different from the relative permittivity ε_h of the dielectric in the object to be measured, and wherein the distance d_c between the conductive plate and the grounded surface is set or adjusted so that the expression 3 can be satisfied.

11. The charge potential evaluation device according to Claim 7, further comprising an ionizer that produces ions to provide a predetermined atmosphere for the conductive plate and the grounded surface.

12. The charge potential evaluation device according to Claim 11, wherein the first conductor in the object to be measured has a pair of open terminals; and wherein, when the potential difference between the first conductor and the second conductor in the object to be measured is represented

by V', and V_d denotes the value of the minimum potential difference V' that causes damage to the first conductor when one of the open terminals is connected to the ground after a potential difference V' is provided between the first and second conductors by charging the first conductor, the charge potential evaluation device comprises display means for notifying that the V_h value has become lower than the V_d value.

13. The charge potential evaluation device according to Claim 7, wherein the object to be measured is a head gimbal assembly (HGA) in which a first conductor to which a magnetic head is connected and a load beam serving as a second conductor, are opposed to each other with an insulating foundation layer serving as a dielectric therebetween.

14. The charge potential evaluation device according to Claim 13, wherein a protective layer constituted of an insulating material is provided over the first conductor in the head gimbal assembly (HGA).

15. The charge potential evaluation device according to Claim 8, further comprising an ionizer that produces ions to provide a predetermined atmosphere for the conductive plate and the grounded surface.

16. The charge potential evaluation device according to Claim 15, wherein the first conductor in the object to be

measured has a pair of open terminals; and wherein, when the potential difference between the first conductor and the second conductor in the object to be measured is represented by V', and V_d denotes the value of the minimum potential difference V' that causes damage to the first conductor when one of the open terminals is connected to the ground after a potential difference V' is provided between the first and second conductors by charging the first conductor, the charge potential evaluation device comprises display means for notifying that the V_h value has become lower than the V_d value.

17. The charge potential evaluation device according to Claim 8, wherein the object to be measured is a head gimbal assembly (HGA) in which a first conductor to which a magnetic head is connected and a load beam serving as a second conductor, are opposed to each other with an insulating foundation layer serving as a dielectric therebetween.

18. The charge potential evaluation device according to Claim 17, wherein a protective layer constituted of an insulating material is provided over the first conductor in the head gimbal assembly (HGA).